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What is claimed is:

1.   A layered network device driver system comprising:

an operating system dependent module operable to communicate in an operating system dependent format to initiate sending of transmit data and to provide received data;

an operating system independent module that communicates with the operating system dependent module and performs processing on the transmit data and the received data;

a media independent module that places the transmit data in one or more transmit descriptor rings and obtains the received data from one or more receive descriptor rings; and

a media dependent module configured to communicate with the media independent module and with one or more types of network devices and control the one or more types of network devices to send the transmit data from the one or more transmit descriptor rings and to receive the received data into the one or more receive descriptor rings.

2.   The system of claim 1, wherein the media dependent module is operable to configure and initialize one or more registers of a network device.

3.   The system of claim 1, wherein the media dependent module is operable to verify that optional parameters comply with capabilities of a network device.

4.   The system of claim 1, wherein the operating system dependent module is operable to receive a packet to be transmitted from the operating system in an operating system specific format.

5.   The system of claim 4, wherein the operating system dependent module is further operable to convert the packet into an array based data structure, wherein the data structure comprises virtual pointers to one or more data buffers.

6.   The system of claim 5, wherein the operating system independent module is operable to convert the virtual pointers of the data structure into physical pointers.

7.   The system of claim 6, wherein the media independent module is operable to attach the one or more data buffers to a transmit descriptor, wherein the transmit descriptor is of the one or more transmit descriptor rings.

8.   The system of claim 1, wherein the media independent module is operable to access on or more data buffers of a packet associated with a received frame along with optional information.

9.   The system of claim 8, wherein the media dependent module is operable to analyze the packet and optional information for status.

10.   The system of claim 9, wherein the operating system dependent module analyzes the packet for errors.

11.   The system of claim 10, wherein the operating system dependent module is further operable to provide the packet to the operating system.

12.   The system of claim 1, further comprising a message block format for transferring packets between the operating system and the operating system dependent module, the message block comprising:

        a mandatory parameter that includes one or more virtual pointers to one or more data buffers; and

        an optional parameter pointer that points to one or more optional parameters.

13.   The system of claim 12, wherein the one or more optional parameters respectively include a type, a size, and one or more parameters.

14.　　A method of processing a received frame comprising:

obtaining a received packet and generating an array based data structure from the received packet that includes one or more pointers to one or more data buffers;

analyzing status information of the packet and duplicating the packet;

causing the one or more data buffers to be freed;

analyzing the duplicated packet for errors; and

passing the duplicated packet to an operating system for further processing.

15.　　The method of claim 14, further comprising attaching the one or more freed data buffers to an adepter queue for incoming received frames.

16.　　The method of claim 14, wherein the received packet is received by a network device and placed initially in an adapter queue.

17.　　The method of claim 16, wherein a media independent layer removes the received packet from the adapter queue.

18.　　The method of claim 14, wherein duplicating the packet comprises placing a duplicate copy of the packet in a duplicate queue.

19.　　The method of claim 14, wherein an operating system dependent module converts the duplicated packet into an operating system compatible format prior to passing the duplicated packet to the operating system.

20.　　A method of transmitting a frame comprising:

obtaining a packet to be transmitted from an operating system;

converting the packet into an array based data structure that is independent of the operating system;

converting virtual address of the array based data structure that reference one or more data buffers that store the packet into physical addresses;

attaching the one or more data buffers to a transmit descriptor;

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> transmitting the packet by a network device; and

> freeing the one or more data buffers for other use after transmitting the packet.

21.   The method of claim 20, wherein the packet is obtained from the operating system by an operating system dependent module in an operating system specific format.

22.   The method of claim 20, further comprising coalescing the one or more data buffers into contiguous memory space.

23.   The method of claim 20, further comprising attaching the freed data buffers to a send queue for packets awaiting transmission.

24.   The method of claim 20, further comprising attaching optional information to the transmit descriptor by an operating system independent module.

25.   The method of claim 24, wherein the optional information includes a virtual local area network type.